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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/498,749	02/07/2000	Noboru Masuda	33216M038	9264

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EXAMINER

LAMB, BRENDA A

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/498,749

Applicant(s)

MASUDA ET AL.

Examiner

Brenda A. Lamb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-23, 27, 29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-23, 29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claims 9-10, 12-13, 15-16, 18-19 and 21-22 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear how the coating returning means relates to the control means since each claim the function of controlling the timing of the drawing out of coating to the nozzle to the start of feeding of coating to the nozzle.

Claims 1-3, 7-10, 12-13, 15-16, 18-19, 21-22, 27 and 29-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The original filed specification fails to teach or suggest a control means for causing "both" the feeding side two-way valve and the return side two-way valve to open and discharge coating by the time that feeding is started and thereafter, during feeding, causing the return side valve to close after expiration of a prescribed period of time to stop discharge of coating to the return side since the term "both" infers the two valves, the feeding side two-way valve and the return side two-way valve, are simultaneously controlled so as to open and discharge coating by the time that feeding is started.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 11, 14, 17, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milbourn et al.

Milbourn et al teaches an intermittent coating apparatus comprising intermittent coating supply means, included pump 20 which intermittently feeds a coating to a nozzle; coating returning means including a piston 28 that intermittently draws the coating out of the nozzle, and feeds the coating to the nozzle to return the coating to the nozzle; and control means which includes controller 38 for controlling valve 26 and piston 28. Milbourn et al teaches the controller 38 controls timing operation of valve 26

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and piston 28. Milbourn et al teaches the timing of the operation of valve 26 and piston 28 is adjustable (see column 4 lines 23-66). Milbourn et al fails to teach the timing of the operation of valve 26 and piston 28 is such that the operation time A to draw the coating out of the nozzle is less than an operation time B to return the coating to the nozzle. However, it would have been obvious in the Milbourn et al apparatus to adjust the operation timing for valve 26 and piston 28 using the Milbourn et al controller having means to adjust operation timing for valve 26 and piston 28 in such a manner that operation time A to draw the coating out of the nozzle A is less than an operation time B to return the coating to the nozzle dependent on desired spacing of the patches of coating on the substrate. With respect to claim 14, the functional recitation that coating is drawn out of the nozzle in an amount set forth in the instant claim has not been given patentable weight because it is narrative in form. In order to be given patentable weight, functional recitation must be expressed as a "means" for performing the specified function, as set forth in 35 USC 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional recitation. In re fuller, 1929 C.D. 172; 388 O.G. In any event, Milbourn et al teaches the stroke of the piston is adjustable and therefore the volume of coating withdrawn from the nozzle is adjustable. Milbourn et al fails to teach the stroke of the piston is adjustable such the amount of coating withdrawn is within the scope of the claim. However, it would have been obvious to optimize the stroke on the adjustable stroke piston in the Milbourn et al apparatus such that it is within the scope of the claim dependent on the desired application rate of coating to the substrate. With respect to

claims 20 and 17, the functional recitation that the coating is returned to the nozzle at a rate within the scope of the claim has not been given patentable weight because it is narrative in form. In order to be given patentable weight, functional recitation must be expressed as a 'means' for performing the specified function, as set forth in 35 USC 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional recitation. In re Fuller, 1929 C.D. 172; 388 O.G. 279. In any event, Milbourn et al teaches the adjustable stroke, high speed piston moves such that a patch coat time is about 2 mses. Milbourn et al also teaches the pump used in his apparatus is an adjustable flow rate or gear metering pump. Therefore, it would have been obvious to optimize the stroke on the high speed adjustable stroke piston as well as the flow rate from the metering pump in the Milbourn et al apparatus such that the flow rate of coating returning to the nozzle is within the scope of the claim dependent on the desired application rate of coating to the substrate. With respect to claim 23, although Milbourn et al fails to teach the coating returning means including a piezoelectric element but obvious to drive its coating returning means which includes piston 28 using a conventional drive such as a piezoelectric element for the obvious advantages of greater control of the coating process.

Claims 1-3, 7-8 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaido et al in view of Fujita .

Kaido et al teaches as shown in Figure 3 an intermittent coating apparatus comprising: a nozzle 12, which applies a coating onto a base material; and intermittent

coating supply means, which intermittently feeds the coating to the nozzle, stops the feeding of the coating to the nozzle, and discharges remaining coating to a return side, the intermittent coating supply means including: a coating tank 31, a flow path supplying coating from the coating tank, the flow path including a feeding side in communication with the nozzle, a return side in communication with the coating tank, and segment that connects the feeding side and the return side and a feedline that connects the segment and the coating tank, a feeding side two-way valve 26, positioned between the flow path segment and the feeding side of the flow path, that intermittently feeds and stops the feed of the coating to the nozzle, and a return side two-way valve 28, positioned between the flow path segment and the return side of the flow path, that intermittently discharges remaining coating to the tank through the return side of the flow path, and stops discharges remaining coating to the tank through the return side of the flow path wherein the feedline connects with the segment between the feeding side two-way valve and the return side two-way valve. Kaido et al fails to teach control means causing both the feeding side two-way valve and the return side two-way valve to open and discharge coating by the time that feeding is started and thereafter, during feeding causing the return side valve to close after expiration of a prescribed period of time to stop further discharge of the coating to the return side. However, Fujita teaches the design of an intermittent coating apparatus which is comprised of the following elements: a nozzle 9, which applies a coating to a base material; and intermittent coating supply means, which intermittently feeds the coating to the nozzle, stops the feeding of the coating to the nozzle, and discharges remaining coating to a return side,

the intermittent coating supply means including: a coating tank 1, a flow path supplying coating from the coating tank, the flow path including a feeding side in communication with the nozzle, a return side in communication with the coating tank, and a control means for controlling both the a feeding side two-way valve 8 and a return side valve 10 wherein the control means intermittently opens the return side valve to discharge remaining coating to the tank through the return side of the flow path, and closes the return side valve to stop discharge of the remaining coating to the tank through the return side of the flow path and wherein the control means intermittently opens the feeding side two-side valve to feed coating to the feeding side of the flow path and to the nozzle and closes the feeding side two-side valve to stop flow of coating to the feeding side of the flow path and to the nozzle. Therefore, absent the new matter, it would have been obvious to modify the Kaido et al by providing a control means to control both the return side two way valve and the feeding side two way valve since Fujita et al teaches an intermittent coating apparatus apparatus similar to Kaido et al which is provided with a control means for controlling the feeding side two-way valve and for controlling the return side valve for the obvious advantage of providing a automatic means to replace a manual activity, that is mechanization of the opening and closing the each of the above cited valves, which has accomplished the same result involves only routine skill in the art. In re Venner, 120 USPQ 192. With respect to claim 7, the recitation intermittent coating supply means starts the discharge of the coating to the return side at the time of ending the feeding of the coating is intended end use and does not define applicant's invention over the above cited references since Kaido et al

as modified with Fujita control means would enable one to open the return side two way valve upon ending of the feeding of coating to the nozzle. In any event, Fujita teaches control of the timing of the return side valve to close at the cited valve upon ending of the feeding of coating to the nozzle. Note it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). With respect to claims 2-3, 8 and 30, Kaido et al fails to teach the prescribed period of time or time intervals between discharge of coating to the return side by the return valve and feed of coating to nozzle by the feed valve as set forth in claims 2-3 and 8 or the amount of coating discharged to the coating tank is within the scope of the claim 30. However, Fujita teaches operating the return and feed valves in desired intervals and displacements with respect to each other. Note the functional recitation that the coating is discharged to the coating tank in an amount within the scope of the claim has not been given patentable weight because it is narrative in form. In order to be given patentable weight, functional recitation must be expressed as a 'means' for performing the specified function, as set forth in 35 USC 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional recitation. *In re Fuller*, 1929 C.D. 172; 388 O.G. 279. In any event, it would have been obvious the Fujita control means in the modified Kaido et al apparatus is structured and arranged to operate valves 26, 28 in the manner such that feeding of coating to the nozzle and discharging of coating to the return side occurs within the time intervals set

forth in claims 2-3 and 8 and amount of coating discharging to the coating tank is within the scope of claim 30 since Fujita teaches operating valves in desired intervals and displacements with respect to each other which would obviously affect the amount of coating returned to the coating tank for the obvious reason to achieve the desired intermittent coating results.

Claims 9-10, 12-13, 15-16, 18-19, 21-22, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaido et al in view of Fujita and Milbourn et al.

Kaido et al and Fujita are applied for the reasons noted above. Kaido et al and Fujita each fail to teach a coating returning means which intermittently draws the coating out of the nozzle and returns the coating to the nozzle. Milbourn et al teaches an intermittent coating apparatus comprising a coating returning means which intermittently draws the coating out of the nozzle and returns the coating to the nozzle which includes an air-operated piston 28 and supply valve 26 wherein the piston 28 and valve 26 are co-operatively operated. Milbourn et al teaches the coating returning means returns coating to the nozzle at the start of feeding of coating to the nozzle and draws the coating out of the nozzle at the time of stopping the feeding of coating to the nozzle. However, it would have been obvious given the modifications of the Kaido et al as discussed above to provide an additional means for controlling flow to and from the nozzle such as the piston such as taught by Milbourn et al for the taught advantage of the combination of the piston and supply valve for supplying coating to the nozzle – enable one to achieve clean and sharp edges to the patch of coating applied to the substrate. Thus claims 9-10 and 27 are obvious over the above cited references. With

respect to claim 29, it would have been obvious the Fujita control means in the modified Kaido et al apparatus is structured and arranged to operate valves 26, 28 in the manner such that feeding of coating to the nozzle occurs within the recited time intervals since Fujita teaches controlling the operation of the operating valves in desired intervals and displacements with respect to each other. With respect to claims 12 and 13, the functional recitation that that the coating is drawn out of the nozzle at a rate within the scope of the claim has not been given patentable weight because it is narrative in form. In order to be given patentable weight, functional recitation must be expressed as a 'means' for performing the specified function, as set forth in 35 USC 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional recitation. In re Fuller, 1929 C.D. 172; 388 O.G. 279. In any event, Milbourn et al teaches his piston is an adjustable stroke, high speed piston. Therefore, it would have been obvious to optimize the stroke on the Milbourn et al high speed adjustable stroke piston in the modified Kaido et al apparatus such that the flow rate of coating drawn out of the nozzle is within the scope of the claims dependent on the desired sharpness of the end surfaces of the coating patches on the substrate. With respect to claims 15, 16 and 18, the functional recitation that that the coating is returned to the nozzle at a rate within the scope of the claim has not been given patentable weight because it is narrative in form. In order to be given patentable weight, functional recitation must be expressed as a 'means' for performing the specified function, as set forth in 35 USC 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional recitation. In re Fuller, 1929

C.D. 172; 388 O.G. 279. In any event, Kaido et al teaches the supply pump for the intermittent coating is servo-controlled such that the amount of coating supplied to the nozzle is adjustable (see Kaido et al at column 15 lines 46-64). Also, Milbourn et al teaches his piston is an adjustable stroke, high speed piston. Therefore, it would have been obvious to optimize the stroke on the Milbourn et al high speed adjustable stroke piston in the modified Kaido et al apparatus as well as metering of the coating supplied to the nozzle by the servo-controlled supply pump such that the flow rate of coating returned to the nozzle is within the scope of the claims for the obvious reason to enable to achieve the desired coating results on the substrate and especially with Milbourn et al teaching a slight excess of returned coating at the start of coating enables one to achieve to sharper front edge to the patch of coating applied to the substrate. With respect to claims 21-22, although Milbourn et al fails to teach the coating returning means including a piezoelectric element but obvious to drive its coating returning means which includes piston 28 using a conventional drive such as a piezoelectric element for the obvious advantages of greater control of the coating process.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

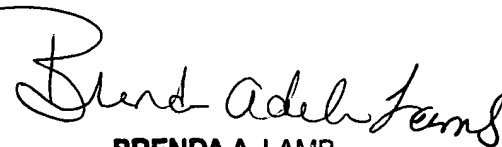
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Brenda A Lamb at telephone number (571) 272-1231. The examiner can normally be reached on Monday and Wednesday thru Friday with alternate Tuesdays off.

B. Lamb/af

May 25, 2005


BRENDA A. LAMB
PRIMARY EXAMINER